



TITLE OF THE INVENTION

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UNMANNED DURABLE GOODS SALES FACILITY

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BACKGROUND OF THE INVENTION

This invention fits into the general category of being a sales facility. More particularly, this invention fits into the category of being a sales facility for durable goods. Still more particularly, this invention is an unmanned durable goods sales facility. Finally, this invention is an unmanned durable goods sales facility where the durable goods are heating and air conditioning equipment and supplies.

In operating a sales facility such as a store or warehouse, the largest expense usually is spent to employ people to work at the facility along with any health or injury insurance and any pension plans relating to such employees that must be paid out of the pockets of the owner/employer of the sales facility.

The solution to this problem is to construct an unmanned sales facility which can operate without employees. With perishable goods such as refrigerated foods, there would be special problems in operating an unmanned sales facility that relate to food spoilage. With respect to fungible goods such as cereal grain or petroleum other problems might occur in the operations of an unmanned sales facility. However, with durable goods, that is, goods that are stable, long lasting, discrete and therefore easily tracked, an unmanned sales facility is conceivable. Thus, it is a general object of this invention to be a functioning unmanned durable goods sales facility. It is a further object of this invention to be a functioning unmanned durable goods sales facility wherein the said durable goods are heating and air conditioning equipment and supplies.

One of the advantages of an unmanned sales facility is that it can be used by properly regulated customers at any time of the day or year. However, there is a security

problem in that the buildings holding the sales goods need to allow access to licensed customers but not to unlicensed persons. Several of the problems involved in operating an unmanned sales facility include: theft, unauthorized entry, credit risk of customers and liability for possible injuries to customers. Solving such problems are also further objects of the present invention. For example, to help prevent injuries to customers, no heating or air conditioning supplies in the facility to be described here are stacked over shoulder height.

Another object of the present invention is to secure the building in which the heating and air conditioning supplies are housed. There is a need to know when a person went in or out of the facility and how long a person stayed. There is also a need to determine what goods went in or out with such a person. Such problems are solved in the operation of the current invention which will now be described.

BRIEF SUMMARY OF THE INVENTION

This unmanned durable goods sales facility is comprised of a commercial property site that is publicly accessible from a public road and the following: On the commercial property site is a barrier with an automatic electronically controlled gate. The automatic electronically controlled barrier in this case is a fence and the entrance/exit gate of the fence is opened by a proximity card reader for properly qualified customers to whom such proximity cards have been issued upon fulfilling certain requirements of the facility operator/owners.

Within the area enclosed by the barrier fence is a building or warehouse which possesses automatic electronically controlled doorways. Entrance to the warehouse at the rear of the building is gained by entering a five digit code into a keypad which unlocks the door. The customer may then open the door and enter the warehouse.

The warehouse building houses the durable goods for approved customers to purchase or buy. In the particular embodiment of the invention described here, the durable goods are heating and air conditioning supplies. When a customer wants to buy an item that is stocked in the warehouse, the customer faxes a copy of the item's receipt to the operators and then drops the receipt in a slot of a locked drop box so that a customer's purchase is kept confidential from other customers. The said customer then loads his or her truck with the item or items purchased and leaves the facility in the reverse manner that the customer entered. Various purchases of the customer are debited with the credit account that had been set up for that particular customer when that customer was approved by the facility operators and issued a proximity card.

The sales facility and its operators are prepared for various problems or emergencies that might occur in the operation of this unmanned warehouse facility. Smoke alarms, fire extinguisher, and bolt cutters are placed throughout the warehouse. Surveillance cameras are placed throughout the warehouse and surrounding areas. Telephone, fax, and computer allow the customers to communicate instantly with the facility operators if a problem or emergency occurs. If a customer is disabled and unable to reach one of these communication devices, the facility operators are automatically alerted after a twenty minute period. In the absence of any disabling of a customer, the approved customer is required to take action to disarm such an automatic system by pressing one of several deactivation keypads every twenty minutes when a warning system reminds the customer to do so. Thus, the sales facility possesses an electronic means for alerting the facility operators that a customer is in distress.

BRIEF DESCRIPTION OF THE DRAWINGS

The unmanned durable goods sales facility that constitutes this invention is shown in the accompanying drawings. Figure 1 shows an aerial view of the sales facility as a whole. Figure 2 shows a floor plan of the sales facility warehouse. Figure 3 shows a floor plan of the sales facility office and computer room. Figure 4 shows a floor plan of the sales facility security and power room.

DETAILED DESCRIPTION OF THE INVENTION

Looking at Figure 1, it is seen that this unmanned durable goods sales facility 11 is located on a commercial property site which is adjacent to a public highway 15. The publicly accessible commercial site is bounded by the highway 15 and the property lines 20, 25, and 32. Property line 20 measures 300 feet. Property line 32 measures 300 feet. Property line 25 measures 102 feet. An entrance drive 39 leads from the highway 15 into the facility 11. The entrance drive 39 also leads to a front parking lot 16.

Inside the facility 11 is an automatic electronically controlled barrier, in this case, an automatic electronically controlled rectangular chain link fence with sides 24, 26, 31, and 18. The front side 18 of the chain link fence possesses a sliding chain link security gate 36 for vehicles and also a personnel chain link gate 17. In front of the security gate 36 is a proximity reader 37 and in back of the security gate 36 is another proximity reader 35. The entrance drive 39 leads along a paved path 10 to a rear parking lot 27. A gate camera 34 scans all vehicles traversing this path 10 in either direction.

Within the area enclosed by the chain link fence sits a building, in this case a corrugated steel warehouse 12 within which the heating and air-conditioning supplies, the durable goods of this invention, are stored. Facing the rear parking lot 27, adjacent to the warehouse 12, are a porch 71, a truck dock 28, and a loading platform 72. A door entry security keypad 21 is located at the porch 21. A rear camera 30 is located at the loading platform 72 and scans all traffic traversing the platform 72 and the truck dock 28.

Various vehicles of licensed customers for picking up assorted heating and air-conditioning supplies are shown in Figure 1. Vehicle 38 is shown in the entrance drive

39 heading for the rear parking lot 27. Vehicle 33 is shown in the paved path 10 leaving the rear parking lot 27. Vehicle 23 is shown parked next to the porch 71. Vehicle 29 is shown parked next to the loading platform 72.

Looking at Figure 2, it is seen that the aforementioned porch 71 leads to a rear entrance doorway 66 to the inside of the warehouse 12. The aforementioned truck dock 28 leads to an electric operated overhead door 68 inside the warehouse 12. The aforementioned loading platform 72 leads to another electric operated overhead door 70 inside the warehouse 12. In addition to the entrance exit doorway 66, the warehouse also has another entrance exit doorway 98.

The warehouse 12, itself, is rectangular in shape measuring 100 feet by 60 feet. Near the entrance exit doorway 98, inside the warehouse, are located an exit sign 97, a fire extinguisher 96, a security key pad 95, a bolt cutter 93, and two security cameras 92 and 90. Near the entrance exit doorway 66, inside the warehouse, are located an exit sign 65, a security keypad 63, and a bolt cutter 62.

Between the electrically operated overhead door 68 and the electrically operated overhead door 70 is located a fire extinguisher 69. Next to the electrically operated overhead door 70 are located two security cameras 74 and 75.

The location of various heating and air conditioning supplies and other items within the warehouse 12 will now be indicated. Flexible duct is stored at location 94. Blanket insulation products are stored at location 42. A security camera 41 is located next to the blanket insulation products. Next to the blanket insulation products are a women's restroom 46 and a men's restroom 43. Next to the men's restroom 43 are stored condenser pads and Freon at location 44. A bolt cutter is also stored at location 44.

Next to the restrooms are located a fire extinguisher 48 and a security camera 49. Gas package units 12 SEER (Seasonal Energy Efficiency Ratio) are stored at location 53 where there are also located security cameras 51 and 55. Heat pump package units 12 SEER are stored at location 56 where there is also located a security camera 57. Gas package units 10 SEER are stored at location 59 where there is another security camera 61. Heat pump package units 10 SEER are stored at location 60. Air conditioning condensers 10 SEER are stored at location 58. Air handlers 10 SEER are stored at location 79. Furnaces 80% AFUE (Annual Fuel Utilization Efficiency) are stored at location 77. Heat pump condensers 12 SEER are stored at location 80. Air handlers 12 SEER are stored at location 76. High efficient furnaces 90 plus AFUE are stored at location 78. Heat pump condensers 10 SEER are stored at location 82. AC coils are stored at location 67, next to which is located a security camera 85.

Black iron fittings are stored at location 81. Galvanized pipe is stored at location 83. At locations 54, 52, 50, and 47 are shelves 36 inches wide, 54 inches tall, and 28 feet long, double sided with 4 shelves, where smaller heating and air conditioning parts are stored.

Hart & Cooley register products are stored at location 46 on 3 feet by 10 feet two shelf racking 30 inches long. Acme prefab products are stored at location 40 on 3 feet by 10 feet two shelf racking 30 inches long.

The warehouse 12 also contains an office and computer room 13, next to which are a security camera 86 and a TV 84. Also, next to the office and computer room, the warehouse 12 contains a security and power room 14, next to which are a security keypad 89 and a security camera 88.

Looking at Figure 3, it is seen that the office and computer room 13 has a door 102 and doorway 103. Also, inside this room is desk 100 on which sit a telephone 108 and a computer 99 with its keyboard 107. A chair 101 sits by the desk. This room also contains an order drop box 104 and a table 105 on which sits a fax machine 106. A security camera 87 scans activities that take place within the room 13.

Looking at Figure 4, it is seen that the security and power room 14 has a door 109 and a doorway 110. The doorway 110 is usually closed with the door 109 being locked. Thus, the security and power room 14 is off limits to regular licensed customers of this sales facility and is normally accessible only to the operators of this facility. This room has a 200 amp electrical panel 115. This room has a fax line terminal 118, a phone line terminal 117, and a Cayman DSL modem and line terminal 116. This room has a CoStar CR1600-80 camera server and 19" Toshiba color camera server monitor 111. This room contains a terminal 114 for security system I (Vista-128BP) and a terminal 113 for security system II (Vista 20P). This room contains a PassPort remote network access. This room also has a computer and network rack 112 containing the following components: a Cayman DSL modem, a Cisco 3002 VPN client, a Cisco 2924 network switch, a TrippLite UPS backup power I terminal, a TrippLite UPS backup power II terminal, and a Panduit patch panel.

More information about how this invention operates will now be disclosed. The embodiment of the invention disclosed here is designed to provide qualified customers unlimited self service to heating and air conditioning supplies 24 hours per day, 7 days per week, and 365 days per year. Customer safety while entering and exiting this sales facility 11, while finding, moving, and loading the heating and air conditioning products,

and during unusual events is a most important priority. Personal safety is maximized through customer training in all aspects of the sales facility operation and through the security, surveillance, and operational systems incorporated in the facility 11.

The warehouse 12 that is central to this facility has a medium size of 6000 square feet. The heating and air conditioning products carried in this warehouse 12 are types that are most needed by the majority of customers in the particular area in which the sales facility 11 is located. If customers need products that are not carried, they may contact the operators of this facility electronically, and request that those products be stocked.

Once inside this facility 11, access to the warehouse 12 is granted by presenting an issued proximity card to the proximity card reader 37 at the only electric operated entrance gate 36. The customer will then drive through the path 10 to the rear of the warehouse 12 to the loading area adjacent to the rear parking lot 27, where he or she will be required to first enter the warehouse 12 through an entrance doorway 66 protected by a security key pad 21.

The warehouse 12 is protected by two security systems I and II. The main security system I protects the warehouse 12 from unauthorized access and provides fire and smoke detection. That part of the main security system I guarding access to the warehouse is deactivated when any customer has been granted access by the entrance gate authorization system and remains off until the last customer exits through the entrance gate 36. The fire and smoke detection part of security system I remain active even when the access guarding part of security system I is disarmed. The gate authorization system keeps track of how many customers are in the warehouse 12, when they entered, and when they exited.

With the disarming of the main security system I, the second security system II starts a twenty minute arming timer. At the end of the twenty minute timing cycle, a ninety second warning horn alerts all customers in the warehouse 12 that the second security system II is about to arm itself. It is the responsibility of any customer in the warehouse 12 to deactivate the arming sequence by typing in a four number code and “off” on the security keypads provided in the warehouse 12. The two security keypads 21 and 89 are located respectively by the rear entrance door 66 and near the office and computer room 13. It is assumed that if the second security system II is not deactivated, that the customer in the warehouse 12 is unable to do so because of an accident, health problem, or unforeseen event. In that case, the second security system will immediately arm, activate, and dial an electronically connected security central office of the facility’s operators to alert them to the situation. The security central office will immediately dispatch paramedics, fire, police, and appropriate operator personnel to assist the disabled customer. If, as is normally the case, a customer deactivates the second security system II, it again restarts the twenty minute rearming cycle. These cycles continue until the last customer exits the premises through the entrance gate 36. It is the purpose of these two security systems I and II to provide a response action within twenty minutes to a disabled customer any time that the warehouse 12 is occupied.

In addition, a multi-camera surveillance system comprising security cameras 30, 34, 41, 49, 51, 55, 57, 61, 74, 75, 85, 86, 87, 88, 90, and 92 monitors and records all activities on the premises of this sales facility 11. Operator personnel can view the surveillance system activities live from any authorized remote network connection at any time. This allows operator personnel to evaluate the main security alarm I activation, a

second security system II disability alarm activation, or a fire notification in a timelier manner. The surveillance system is also in place in the unlikely event that something might happen between customers, other customer's quests, or any unauthorized persons. In addition, this security system allows operator personnel to help customers find or resolve questions in a real time manner by directing customers to a product or solution. It is the responsibility of everyone to legally behave appropriately towards others and to treat any property that is not theirs legally and with respect. The multi-camera security system helps to deter or resolve any conflicts in this area. Backup copies of the camera surveillance are made periodically and saved for a minimum of four years. Historical surveillance records can also be accessed by any operator personnel immediately to resolve any unclear situation.

In a normal course of operation a customer enters the facility 11 and warehouse 12, finds and loads all products he or she needs. There are many methods available to record and invoice the customer for products taken. Some of them are very technology oriented and can be more complicated. Others can be quite simple. The facility operators try to keep it as simple as possible. Thus, it is the customer's responsibility to write the quantity, product code, product description, product serial number (if applicable) and customer name on a two part form order pad provided. The customer then separates the two part form, keeping one for his or her records. The original form is then placed in the fax machine 106 and a button pressed to transmit the order to the operators' central branch office. A locked drop box 104 is provided for the customer to place the original order into, so that other customers will not have access to what has been purchased by a competitor. Operator personnel pick up the original orders in the

drop box 104 on a timely basis. Each morning the main operator office branch assembles all the faxed orders sent to them during the previous 24 hours. Accounts receivable in operator headquarters generates and sends a report to the main operator office branch of all customers entering the warehouse 12 during the preceding 24 hours. The list and the faxes are compared. If a customer has entered and exited without any orders being faxed, the security camera system is reviewed and the customer called on the telephone to see if there was a problem or if the required products were not available or found. Thus, customers of this facility normally leave a record of the durable goods purchased with the facility operators.

When customers have picked up everything that they need and the last customer has exited the entrance gate 36, the second security system II is disabled and the main security system I completely rearmed. The security system I checks that both electrically operated overhead doors 68 and 70 are closed and that the personal doorways 66 and 98 are closed. If any of these four doors has been left open, the security system I automatically shuts that door.

With respect to the process of certifying various persons to become qualified customers for this sales facility 11, it is the right of the operators of this facility 11 to refuse to issue an entrance proximity card or do business with any business or individual for security or business reasons if warranted.

A business requesting to participate in the facility 11 must have completed a credit application and purchase agreement and have been issued a credit account with the operators of the facility. Customers on a cash or COD basis are not allowed to participate in the facility.

In addition to the business being approved, each individual from that business, who wishes access to particular embodiment of the invention described here, also has to fill out an individual credit authorization form and a background investigation form for approval. Pictures of the individual are taken for the proximity card and future identification. The proximity card issued is for the use of the authorized individual only and may not be given to any other person.

Individuals must be authorized by their respective employers to participate in the facility. The employers are required to accept full responsibility for their employees purchases and actions while in and around the warehouse 12. A business authorization form needs to be submitted by the company for each individual wishing access to the facility 11. For any reason, if the company no longer wishes an individual to have access to the facility 11, a business de-authorization form is submitted to the operators of the facility via fax or mail.

Each business participating in the facility 11 must have at least one individual that has a valid EPA refrigeration certification card on file with the operators and be authorized to purchase refrigerant through the business.

Forms that are required for authorization include: an access agreement, a credit application and purchase agreement, a business credit and authorization check form, an individual credit authorization form (for each person wishing access), a background authorization form (for each person wishing access), an individual release form (for each person wishing access), an EPA refrigerant certification card, individual pictures for proximity card and file., a business owner authorization form, a tour and training check

list form of completion, an indemnification agreement, and a forklift certified training card.

A tour of the exterior and interior of the facility 11 will be given to each individual qualified for access to the facility. The tour will include all entrance, exits, and loading doors, front locked and chained walk gate, all fire extinguishers, first aid kits, all flash lights, bolt cutters, all security keypads, all telephones for normal or emergency needs, the order/fax process, computer/internet training, all devices for emergency egress from the locked fence area, rest room facilities, and office facilities.

With regard to entrance and exit procedures for this invention, entrance to the facility 11 is gained by presenting an authorized proximity card to the proximity reader 37 on the left hand side of the driveway just before the entrance gate 36. The card does not need to be inserted, just placed close to the reader 37. It is the intention of the facility operators that only one vehicle pass through the gate 36 in one open and closing cycle. A customer should not allow another vehicle to pass through the gate while he or she is opening the gate. The gate 36 automatically closes approximately 10 seconds after it opens. This allows ample time for a customer to drive through the gate 36. There is a buried cable in the drive that senses a vehicle in motion through the gate 36 and will not allow the gate 36 to shut if the vehicle is still in the area of the gate 36. A customer should not attempt to drive through the gate 36 if it is in the process of closing. The authorizing gate system keeps track of the individuals that have gained entrance to the facility 11 and when they leave. If a customer lets another person in with themselves, the system will not know that and such customer will have compromised the integrity of the safety systems of this facility.

A customer then drives around to the back of the warehouse 12 and parks near the rear entrance door 71. This doorway 66 has a keypad entrance system 21. When the customer types the appropriate five space code the doorway 66 unlocks and the customer may enter the warehouse 12. After the customer loads the material that he or she needs and has faxed a copy of the order to the central office of the operators, when it is time for the customer to exit, the customer then closes all the doors that he or she has opened to load his or her truck. The overhead doors 68 and 70 are opened and closed using electric door operator buttons.

The customer exits the warehouse 12 through the doorway 66 and proceeds to the entrance gate and provides his or her proximity card to the exit proximity reader 35, just as the customer did for entering. The exit proximity reader 35 is on the left side of the driveway as the customer approaches the gate 36.

If someone else is in the process of entering the premises at the same time as a customer is leaving, the customer should leave enough room for them to pass. The customer should wait until the gate 36 has closed before presenting his or her proximity card to the reader 35. Under no circumstances should a customer attempt to drive out of the facility after someone has just entered and the gate 36 has not closed yet. If a customer does this, the gate security system will not know that the customer has left and the police will be called within 20 minutes.

Two security systems I and II are installed in this facility for the safety of the customer. If the warehouse 12 is occupied, the second system II tries to arm itself every 20 minutes. This second system II actually sounds an intermittent horn for 90 seconds before it actually arms itself. The 90 second time period allows anyone in the warehouse

12 to go to one of two keypads 63 or 89, and type a five space code to stop the activation sequence. If someone is in the building and the second security system II is not deactivated, the assumption is that that person is incapacitated and requires immediate help. The security system then will call the police, rescue, and appropriate operator personnel to come to the warehouse to help. If a customer has just closed the warehouse doors and is ready to leave and the 90 second pre alarm sounds, the customer may drive to the exit proximity card reader 35 and present his or her card. This also will deactivate the arming sequence.

- The warehouse 12 is protected by a smoke and fire alarm system. If a customer observes any smoke or fire in or near the warehouse 12, the customer may go to one of the two security keypads 63 and 89 and press the red emergency button labeled "Fire". This will call the fire department immediately.

Under no circumstances should a customer endanger himself or herself or anyone else to activate the above alarm. There are fire extinguishers located throughout the warehouse for customer use if needed. The safety of the customer is the operators' primary concern, and the customer should exit the warehouse building quickly in an emergency and move as far away as possible for his or her own safety.

- The exit gate, security systems, smoke and fire systems, and computer systems of this facility are on an uninterruptible power backup system and will work for a short period of time. This allows the customer to exit the premises without inconvenience. The telephone 108 is powered by the telephone company and will work unless the telephone lines have been broken.

There are two first aid kits in this warehouse. One first aid kit is located next to the rest rooms 43 and 44, and the other first aid kit is located in the office and computer room 13. If a customer is hurt on the facility premises, he or she should call the operators immediately so that the operators may help the customer in any way.

In case of power outages at night at this facility, there are flashlights located throughout the warehouse 12. If all power is lost and the personnel gate 17 will not open, bolt cutters 62 and 93 are provided for the customer to cut the chain on the gate 17 for his or her exit. Also, in such case, any vehicle that the customer has on the premises should be moved to the back of the property out of any possible danger until help arrives to open the main gate 36.

If another authorized or unauthorized person threatens a customer in any way, the customer should avoid any confrontation at all costs. In this case, the customer should proceed to the nearest keypad 63 or 89 and activate the emergency fire code by pushing the red "Fire" button. This notifies the fire and police departments that there is an emergency in progress and they will dispatch help immediately. The customer should leave the facility and avoid the confrontational individual for his or her own safety.

Within the warehouse 12, there is a forklift available to move heavy equipment and to load vehicles. OSHA requires that anyone operating a forklift be certified and trained through an approved course. Training encompasses care, operation, safety, and limitations of the use of a forklift. If the forklift is used to load a truck, it is not allowed out of the warehouse nor is it allowed to be driven into the back of a truck when the truck dock 28 or the platform 72 is used. The forklift may not be used with a rider along. The forklift may not be used to lift a person off the floor for any reason.

Safety training is provided by the operators to teach customers the proper techniques in lifting objects to reduce possible injuries to the back, leg, arms, and other areas of the body. Instruction is also provided to customers in the proper use of dollies and carts for moving and loading inventory. For the safety of the customers, no climbing on boxes or shelving is allowed at this facility.

Loading of vehicles is an everyday event for most contractors. Customers are encouraged to observe courtesy and common sense when loading around other people's vehicles and property. The truck dock 28 may be used to load vehicles. The truck dock 28 is below ground level and places the bed of the truck below the floor level of the warehouse 12. Extra caution in using the truck dock 28 and the loading platform 72 is urged on all the customers.

A telephone 108 is located on the desk 100 in the office and computer room 13. When a customer is finished with a telephone conversation, the phone should be returned to its cradle. Telephone numbers of operator personnel are posted on a bulletin board above the desk in the office.

While in the warehouse, customer access to the Internet is provided if needed. Use of the provided Internet access is intended to be primarily for business related purposes. The facility operators possess the ability to monitor customer use of the Internet, and actual web-site connections, and length of time spent on these connections are recorded. Excessive use of the provided Internet access for non-business related purposes results in the loss of access privileges. The facility network restricts access to sites that are inappropriate for the work place such as adult or sexually explicit sites.

Entrance to this facility with the use of the proximity card is authorized for the approved individual only. The operators ask that the customer does not let unauthorized individuals enter the facility while he or she is inside the warehouse 12 or while entering or exiting the premises. The authorized individual and his or her company are responsible for any unauthorized individual entering the facility with them.

No smoking and no alcoholic beverages are allowed inside the warehouse 12 or on the property site 11 of this facility.

Each customer who is permitted access to this facility must execute an indemnification agreement form and a release form which must be delivered to the facility operators prior to the initial access to this facility.

Each applicant for authorized use of this facility is given an instruction manual on how to use this facility and the rules that must be followed by authorized customers. A complete set of forms required for authorization is attached to the instruction manual.